

UNITED STATES DISTRICT COURT  
WESTERN DISTRICT OF WASHINGTON  
AT SEATTLE

LUFTHANSA TECHNIK AG,

Plaintiff,

v.

ASTRONICS ADVANCED ELECTRONIC  
SYSTEMS CORP. and KID-SYSTEME  
GMBH,

Defendants.

Case No. C14-1821RSM

ORDER RE: CLAIMS CONSTRUCTION

**I. INTRODUCTION**

This matter comes before the Court on the parties' briefs regarding Claim Construction. Dkt. ## 62, 63, 81, 82. Oral argument was held on February 5, 2016, pursuant to *Markman v. Westview Instruments, Inc.*, 52 F.3d 967 (Fed. Cir. 1995). Having reviewed the parties' briefing, and having considered the arguments and evidence presented in the *Markman* Hearing, the Court makes the following rulings regarding the patent claim terms at issue in this matter.

**II. BACKGROUND**

Plaintiff Lufthansa Technik AG ("Lufthansa") alleges infringement of United States Patent No. 6,016,016 ("the '016 patent") by Defendant Astronics Advanced Electronic Systems

1 (“AES”).<sup>1</sup> Lufthansa, in addition to being associated with other aspects of civil aviation, is also  
 2 an innovator in the field of aircraft equipment. Dkt. #62 at 12. The inventions of the ’016  
 3 patent were conceived by two Lufthansa employees, Andrew Muirhead and Henry Starke. *Id.*  
 4 at 13. On May 31, 1997, the inventors filed an initial patent application in Germany, ultimately  
 5 leading to European Patent No. 0881145. *Id.* On May 28, 1998, the inventors filed the  
 6 application that became the ’016 patent in the United States. *Id.*

8 The patent claims at issue are directed to an aircraft power outlet system that “applies...  
 9 voltage to the socket when the plug detector signals the presence of a plug.... i.e., no... voltage  
 10 is provided... as long as no plug of an electric device is inserted.” Dkt. #64-1 at 7 (JA5).<sup>2</sup> This  
 11 “excludes a danger to people by a potentially high supply voltage in the socket when the socket  
 12 is not used [or by] manipulations of the socket by children by means of paper clips, knitting  
 13 needles etc...” *Id.* The system has a feature that detects the presence of the contact pins of a  
 14 properly-inserted plug before allowing power to flow to the socket. The patent explains that  
 15 when a plug is inserted, the free ends of the contact pins actuate two microswitches in the  
 16 socket that detect the presence of a plug. JA6, 4:56-65. A “control and supervision unit”  
 17 determines the time between the activation of one plug prong contact switch and that of the  
 18 second contact switch. JA8, 7:46-49. If the contact time is below a pre-determined “maximum  
 19 value,” the system allows power to flow to the socket via the supply lines. JA8, 7:49-51, 56-  
 20 61. This so-called timing function restricts the supply of power to the outlet when the system  
 21 detects a foreign object inserted into only one slot in the socket or if the time difference  
 22 between detection of two inserted objects exceeds the pre-determined maximum time value.  
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 28 <sup>1</sup> Lufthansa and AES are litigating this issue in Germany, with an appeal currently pending. Dkt. #62 at 12.

<sup>2</sup> Hereinafter, the Court will cite to the Joint Appendix submitted by the parties by referring to its internal page numbers, e.g. JA005. This Joint Appendix is available at Dkt. #64-1 through 64-3.

1 The invention includes other important safety features, e.g., if the system detects a fault or short  
2 circuit, the power is shut off. JA6, 3:12-14.

3 Lufthansa eventually “teamed up with Defendant KID-Systeme GmbH (“KID”) to  
4 commercialize the inventions of the ’016 patent.... [licensing] KID to practice the ’016 patent  
5 and its foreign counterparts, and KID’s SKYPower line of power outlet systems incorporate the  
6 patented inventions.” Dkt. #62 at 12.

8 Lufthansa filed its Complaint in this Court on November 26, 2014 and moved for leave  
9 to amend its Complaint and join KID as a Defendant (Dkt. #32) on September 8, 2015. Initial  
10 briefing on claim construction was filed by Lufthansa and AES on November 25, 2015 (Dkt.  
11 ##62, 63), with responsive briefing (Dkt. ##81, 82) filed on December 16, 2016. Oral  
12 argument occurred on February 5, 2016.

14 KID made an appearance on January 8, 2016, solely to contest jurisdiction and move to  
15 dismiss claims brought against it. *See* Dkt. ## 83, 97. KID has not submitted briefing on claim  
16 construction and did not participate in the *Markman* hearing. KID’s Motion to Dismiss is  
17 currently noted for April 8, 2016. Dkt. #108.

### 19 III. SUMMARY OF CLAIMS FOR CONSTRUCTION

20 The parties submitted a Joint Claim Construction and Prehearing Statement that  
21 identified disputed claim terms. Dkt. #47 at 2-7. The following are the relevant claims with  
22 disputed terms in bold:

23  
24 1: A voltage supply apparatus for providing a supply voltage for an  
25 electric device comprising a socket to which an electric device is  
26 adapted to be connected by means of a plug, **means for supplying**  
27 **supply voltage** to the socket, the socket including **plug detector**  
28 **means** for detecting the presence of a plug inserted in the socket,  
said **voltage supplying means** being provided remotely from the  
socket and being connected to the socket by a signal line and a  
supply line, the **voltage supplying means** being constructed and  
arranged for applying the supply voltage to the socket when the

1 plug detector means indicates the presence of a plug over the  
 2 signal line to the **voltage supplying means**, the **plug detector**  
 3 **means** being constructed and arranged to detect the presence of  
 4 contact pins of a plug in the socket, and **control means** responsive  
 5 to plug presence detection by said **plug detector means for**  
 6 **rendering the voltage supplying means operative to supply the**  
 7 **supply voltage to the socket only if the time between the**  
 8 **detection of a first contact pin and the subsequent detection of**  
 9 **a second contact pin of the plug does not exceed a**  
 10 **predetermined maximum time value.**

11 2: The voltage supply apparatus as defined in claim 1 wherein the  
 12 **plug detector means** includes mechanical switches activated by  
 13 contact pins of a plug inserted into the socket.

14 3: The voltage supply apparatus as defined in claim 1 wherein the  
 15 socket and the **voltage supplying means** are associated with a seat  
 16 of an aircraft.

17 4: The voltage supply apparatus as defined in claim 1 including  
 18 central voltage source **means for supplying supply voltage** to a  
 19 plurality of **voltage supply means**, and said **control means** is  
 20 constructed and arranged for cutting-off voltage of said central  
 21 voltage source means.

22 12: The voltage supply apparatus as defined in claim 1 including  
 23 **fault current detector means** for detecting fault current to which  
 24 said control means is responsive.

25 13: The voltage supply apparatus as defined in claim 12 including  
 26 voltage switch means for turning off the voltage supply if the fault  
 27 current detector detects fault current.

28 14: The voltage supply apparatus as defined in claim 1 including  
**short circuit detector means** for detecting a short circuit to which  
 said control means is responsive.

15: The voltage supply apparatus as defined in claim 14 including  
 voltage switch means for turning off the voltage supply if the **short**  
**circuit detector means** detects a short circuit.

Defendant AES argues that the above terms are indefinite because they fail to disclose a  
 definite structure, and because the term “subsequent” does not include simultaneous detection  
 of a plug. AES also argues that Lufthansa disclaimed simultaneous detection. Plaintiff

1 Lufthansa is the patent holder in this action, and argues that the '016 patent discloses sufficient  
2 structure for each of the means-plus-function limitations, which are the majority of the above  
3 terms. For Claim 1, Lufthansa argues that it did not disclaim simultaneous detection and that  
4 the timing limitation is not indefinite.

#### 5 **IV. LEGAL AUTHORITY**

##### 6 **A. Claim Construction Principles**

7  
8 Patent claim construction is a question of law for the Court, even if the case is  
9 designated to go to a jury trial, but it may have underlying factual determinations that are now  
10 reviewed for clear error. *Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 837, 190 L.  
11 Ed. 2d 719 (2015); *Markman v. Westview Instruments, Inc.*, 52 F.3d 967 (Fed. Cir. 1995) (en  
12 banc), *aff'd*, 517 U.S. 370, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996). After the claims have  
13 been properly construed, the fact-finder will compare the claims to the allegedly infringing  
14 product or process. The comparison is conducted on an element-by-element basis.

15  
16 When interpreting claims, a court's primary focus should be on the intrinsic evidence of  
17 record, which consists of the claims, the specification, and the prosecution history. *Phillips v.*  
18 *AWH Corp.*, 415 F.3d 1303, 1314-17 (Fed. Cir. 2005) (en banc). The Court should begin by  
19 examining the claim language. *Id.* at 1312. Claim language should be viewed through the lens  
20 of a person of "ordinary skill in the relevant art at the time of the invention." *SanDisk Corp. v.*  
21 *Memorex Prods., Inc.*, 415 F.3d 1278, 1283 (Fed. Cir. 2005). A court should give the claim's  
22 words their "ordinary and customary meaning." *Phillips*, 415 F.3d at 1312-13 (quotation  
23 omitted). In construing a claim term's ordinary meaning, the context in which a term is used  
24 must be considered. *ACTV, Inc. v. Walt Disney Co.*, 346 F.3d 1082, 1088 (Fed. Cir. 2003).  
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1           However, the claims “must be read in view of the specification, of which they are a  
2 part.” *Phillips*, 415 F.3d at 1315 (quoting *Markman*, 52 F.3d at 979. Additionally, the doctrine  
3 of claim differentiation disfavors reading a limitation from a dependent claim into an  
4 independent claim. See *InterDigital Commc'ns, LLC v. Int'l Trade Comm'n*, 690 F.3d 1318,  
5 1324 (Fed. Cir. 2012). The specification can offer “practically incontrovertible directions  
6 about a claim meaning.” *Abbott Labs. v. Sandoz, Inc.*, 566 F.3d 1282, 1288 (Fed. Cir. 2009).  
7 “When consulting the specification to clarify the meaning of claim terms, courts must take care  
8 not to import limitations into the claims from the specification.” *Id.* “[A]lthough the  
9 specification may well indicate that certain embodiments are preferred, particular embodiments  
10 appearing in the specification will not be read into claims when the claim language is broader  
11 than such embodiments.” *Tate Access Floors, Inc. v. Maxcess Techns., Inc.*, 222 F.3d 958, 966  
12 (Fed. Cir. 2000) (quotation omitted). “By the same token, the claims cannot enlarge what is  
13 patented beyond what the inventor has described in the invention.” *Abbott Labs.*, 566 F.3d at  
14 1288 (internal quotation omitted). “Likewise, inventors and applicants may intentionally  
15 disclaim, or disavow, subject matter that would otherwise fall within the scope of the claim.”  
16 *Id.* at 1288.

17           In addition to the specification, a court should consider the patent’s prosecution history,  
18 which consists of “the complete record of the proceedings before the PTO and includes the  
19 prior art cited during the examination of the patent.” *Phillips*, 415 F.3d at 1317. However,  
20 because the prosecution represents an “ongoing negotiation” rather than the “final product” of  
21 the negotiation, “it often lacks the clarity of the specification and thus is less useful for claim  
22 construction purposes.” *Id.* Consulting the prosecution history can, however, be helpful in  
23 determining whether the patentee disclaimed an interpretation during prosecution. *Research*  
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1 *Plastics, Inc. v. Federal Packaging Corp.*, 421 F.3d 1290, 1296 (Fed. Cir. 2005). “Under the  
2 doctrine of prosecution disclaimer, a patentee may limit the meaning of a claim term by making  
3 a clear and unmistakable disavowal of scope during prosecution.” *Purdue Pharma L.P. v.*  
4 *Endo Pharm. Inc.*, 438 F.3d 1123, 1136 (Fed. Cir. 2006); *see also Chimie v. PPG Indus., Inc.*,  
5 402 F.3d 1371, 1384 (Fed. Cir. 2005) (“The purpose of consulting the prosecution history in  
6 construing a claim is to ‘exclude any interpretation that was disclaimed during prosecution.’”).

7  
8 Although courts are permitted to consider extrinsic evidence, like expert testimony,  
9 dictionaries, and treatises, such evidence is generally of less significance than the intrinsic  
10 record. *Phillips*, 415 F.3d at 1317 (citing *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858,  
11 862 (Fed. Cir. 2004)). Extrinsic evidence may not be used “to contradict claim meaning that is  
12 unambiguous in light of the intrinsic evidence.” *Id.* at 1324.

13  
14 Means-plus-function claiming occurs when a claim term is drafted in a manner that  
15 invokes 35 U.S.C. § 112(f) (previously § 112, ¶ 6). *Williamson v. Citrix Online, LLC*, 792 F.3d  
16 1339, 1347-48 (Fed. Cir. 2015). Under this provision, an inventor may express a claim element  
17 “as a means or step for performing a specified function.” 35 U.S.C. § 112, ¶ 6. Means-plus  
18 function claims allow the inventor to claim his invention in terms of the function performed, as  
19 long as he discloses in the specification the structure that performs the associated function. *See*  
20 *Med. Instrumentation & Diagnostics Corp. v. Elekta AB*, 344 F.3d 1205, 1211 (Fed. Cir. 2003).

21  
22 The court must first determine whether each term is a means-plus-function limitation.  
23 To guide this inquiry, the Federal Circuit loosely follows a rebuttable presumption: if the claim  
24 term “uses the word ‘means,’” it is presumed to be a means-plus-function limitation, but if the  
25 claim term does not use “means,” it is presumed not to be. *Williamson*, 792 F.3d at 1348. The  
26 ultimate determination, however, depends upon whether claim would be understood by persons  
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28

1 of ordinary skill in the art to give a sufficiently definite meaning for structure claimed. *Id.* In  
2 this case, the parties agree that certain terms are means-plus-function limitations.

3 Construction of means-plus-function limitations involves two steps. “First, the court  
4 must determine the claimed function. Second, the court must identify the corresponding  
5 structure in the written description of the patent that performs that function.” *Applied Med. Res.*  
6 *Corp. v. U.S. Surgical Corp.*, 448 F.3d 1324, 1332 (Fed. Cir. 2006) (citation omitted).

7  
8 “A patent is invalid for indefiniteness if its claims, read in light of the patent’s  
9 specification and prosecution history, fail to inform, with reasonable certainty, those skilled in  
10 the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct.  
11 2120, 2123 (2014). “Indefiniteness is a legal determination; if the court concludes that a  
12 person of ordinary skill in the art, with the aid of the specification, would understand what is  
13 claimed, the claim is not indefinite.” *Biosig Instruments, Inc. v. Nautilus, Inc.*, 783 F.3d 1374,  
14 1381 (Fed. Cir. 2015) (citation omitted) (finding the challenged claim term not indefinite).  
15 Patents are presumed valid, and a challenger must prove invalidity by clear and convincing  
16 evidence. *Intel Corp. v. VIA Techs., Inc.*, 319 F.3d 1357, 1366 (Fed. Cir. 2003). If a single  
17 claim limitation is indefinite, the entire claim is invalid.  
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19

## 20 **B. ‘016 Patent Terms for Construction**

### 21 *1. “Means for Supplying Supply Voltage”*

22 The first claim term in dispute is “Means for Supplying Supply Voltage.” Claim 1 of  
23 the ‘016 patent provides as follows:  
24

25 1. A voltage supply apparatus for providing a supply voltage for an electric  
26 device comprising a socket to which an electric device is adapted to be  
27 connected by means of a plug, **means for supplying supply voltage** to the  
28 socket...



1 JA8. The parties agree this is a means-plus-function claim term. Dkt. #47 at 1. Lufthansa  
2 asserts that the function is “providing voltage to the socket” and the structure is “circuit  
3 assembly having supply and signal lines, switches, and logic elements to receive and transmit  
4 internal and external signals and configured to activate the switches based upon those signals.”  
5 Dkt. #62 at 24. In contrast, AES argues that the function is “providing voltage to the socket  
6 when the plug detector means indicates the presence of a plug over the signal line to the voltage  
7 supplying means,” and the structure is not disclosed. Dkt. #63 at 19.

9 The Court agrees with Lufthansa that the function is “providing voltage to the socket,”  
10 consistent with the plain language of the claim. Dkt. #62 at 24; JA8. The Court agrees with  
11 Lufthansa that the structure is “circuit assembly having supply and signal lines, switches, and  
12 logic elements to receive and transmit internal and external signals and configured to activate  
13 the switches based upon those signals” based on the language of the specification. In a  
14 preferred embodiment, the voltage supplying means is described as “the supply device 16.”  
15 JA6, 4:11-26. The specification describes structures associated with supply device 16,  
16 including specifically numbered supply cables, signal lines, switches, and “control and  
17 supervision unit 60.” JA6-8. The Court concludes that a person of ordinary skill in the art,<sup>3</sup>  
18 reading the specification, would understand that the structure is a “circuit assembly having  
19 supply and signal lines, switches, and logic elements to receive and transmit internal and  
20 external signals and configured to activate the switches based upon those signals.” *See* JA147.

21 The Court next turns to AES’ allegation of indefiniteness. AES argues that supply  
22 device 16, as shown on Figure 3 of the ‘016 Patent, is a “Russian nesting doll,” i.e. “a black  
23 box containing three interconnected black boxes:” the “control and supervision unit 60,” “short

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28 <sup>3</sup> During the Markman Hearing, the parties agreed that a person of ordinary skill in the art would be at the least an electrical engineer with a college degree. Lufthansa stated that such a person would also need two years of experience working on aircraft systems, but argued that this issue is not dispositive in this case.

1 circuit detector 62,” and “line supervision detector 64.” Dkt. #63 at 20. AES argues that no  
2 circuit structures are disclosed for any of these boxes. *Id.* AES argues that “a patentee cannot  
3 skirt the Patent Act’s requirements by pointing to some structure that theoretically could  
4 perform the function, or arguing that one skilled in the art could look at the specification and  
5 design a structure to perform the claimed function,” citing *Biomedino, LLC v. Waters Techs.*  
6 *Corp.*, 490 F.3d 946, 953 (Fed. Cir. 2007) (“the inquiry is whether one of skill in the art would  
7 understand the specification itself to disclose a structure, not simply whether that person would  
8 be capable of implementing a structure.”). Dkt. #63 at 13. AES argues that *Biomedino* is  
9 dispositive. *Id.* at 18. In *Biomedino*, a case involving medical valves, the Federal Circuit  
10 upheld the lower court finding of invalidity for failure to disclose a structure, reasoning that “a  
11 bare statement that known techniques or methods can be used does not disclose structure.” 490  
12 F.3d at 953.

13  
14  
15 Lufthansa argues that the circuit diagrams of Figures 3 and 5 disclose circuitry, citing  
16 JA6, 3:64-65, 4:1-2; JA147, ¶ 57. Dkt. #62 at 27. In the alternative, Lufthansa argues that “an  
17 applicant is not required to disclose specific circuitry when one of ordinary skill would  
18 recognize the associated structures from the description in the specification.” *Id.* Lufthansa  
19 cites to *Atmel Corp. v. Info. Storage Devices, Inc.*, 198 F.3d 1374, 1380 (Fed. Cir. 1999) as a  
20 case on point. In *Atmel*, the claim included the term “high voltage generating means.” The  
21 defendant argued that the structure disclosed was insufficient because the specification depicted  
22 the high-voltage generator circuit as a “black block,” without any detail as to what electrical  
23 components comprised that circuit. The district court granted summary judgment of invalidity,  
24 but the Federal Circuit reversed because the lower court failed to consider the knowledge of  
25 one skilled in the art. *Id.* at 1383. *Atmel* holds that, consistent with Federal Circuit precedent,  
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1 “disclosure of structure corresponding to a means-plus-function limitation may be implicit in  
 2 the written description if it would have been clear to those skilled in the art what structure must  
 3 perform the function recited in the means-plus-function limitation.” *Id.* at 1380. Because the  
 4 specification cited an article and the patentee’s expert “testified that this title alone was  
 5 sufficient to indicate to one skilled in the art the precise structure of the means recited in the  
 6 specification,” the Federal Circuit found the disclosure in the specification adequate. *Id.* at  
 7 1382. Lufthansa also cites to *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1338  
 8 (Fed. Cir. 2008) for the proposition that a patent is not indefinite merely because the circuit  
 9 element is shown as a “‘black box,’ i.e., nothing in the figures or text of the written description  
 10 describes the details of its inner circuitry.... the absence of internal circuitry in the written  
 11 description does not automatically render the claim indefinite.” Dkt. #81 at 6.<sup>4</sup> In Response to  
 12 AES’s brief, Lufthansa argues that *Biomedino* is not dispositive or applicable, because:

15 The patent in *Biomedino* involved a mechanical device for filtering  
 16 and removing harmful compounds from blood. The term at issue  
 17 there was “control means,” but that term was used in a very  
 18 different context from how it is used in the ’016 patent. There, the  
 19 term apparently described some kind of mechanical valve for  
 20 routing the flow of blood and fluids during the filtration and  
 21 removal process. The patent stated that “known differential  
 22 pressure equipment can be used to operate valves, known valving  
 23 equipment may be used, or known control equipment may be  
 24 used.” 490 F.3d at 951. The Federal Circuit found the disclosure in  
 25 *Biomedino* insufficient, distinguishing it from the situation in  
 26 *Atmel*, where the specification disclosed an article, the content of  
 27 which was well known by skilled artisans in the field. *Id.* at 952.  
 28 The ’016 patent is much more like the patent in *Atmel* than the one  
 in *Biomedino*. Here, the specification discloses structures that a  
 skilled artisan would recognize—for example, switches, supply  
 lines, signal lines, and logic elements.

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<sup>4</sup> Lufthansa also cites to two other cases for similar holdings. Dkt. #81 at 6 (citing *S3 Inc. v. nVIDIA Corp.*, 259 F.3d 1364, 1370-71 (Fed. Cir. 2001); *Intel Corp. v. VIA Techs., Inc.*, 319 F.3d 1357, 1365-66 (Fed. Cir. 2003)).

1 Dkt. #81 at 7. Lufthansa supports their argument by citing to both parties' expert reports. *Id.*  
 2 (citing JA144-160; JA271). Lufthansa's expert testified that a "person of ordinary skill in the  
 3 art would understand that the switches themselves are elements of the circuitry that generate  
 4 signals on the signal lines... [and] would not need any disclosure of specific switches or  
 5 circuitry to understand the scope of the claims." JA150-51.

6  
 7 The Court agrees with Lufthansa's analysis and Lufthansa's expert and concludes that  
 8 the disclosed structures are sufficient under *Atmel*. This conclusion is based on the language of  
 9 the patent itself, and to the extent necessary to establish how someone skilled in the art would  
 10 interpret the structures being claimed, on both expert reports.

## 11 2. "Plug Detector Means"

12  
 13 The next term in dispute is "plug detector means." The parties agree this is a means-  
 14 plus-function claim term, and agree that the function is "detecting the presence of contact pins  
 15 of a plug inserted in the socket." Dkt. #47 at 1, 3. Thus the only dispute is over the structure.  
 16 Claims 1 and 2 of the '016 patent provide as follows:

17  
 18 1. A voltage supply apparatus for providing a supply voltage for an electric  
 19 device comprising a socket to which an electric device is adapted to be  
 20 connected by means of a plug, means for supplying supply voltage to the  
 21 socket, the socket including **plug detector means** for detecting the presence  
 22 of a plug inserted in the socket...

23 ...the **plug detector means** being constructed and arranged to detect the  
 24 presence of contact pins of a plug in the socket, and control means  
 25 responsive to plug presence detection by said **plug detector means** for  
 26 rendering the voltage supplying means operative to supply the supply  
 27 voltage to the socket...

28 2. The voltage supply apparatus as defined in claim 1 wherein the **plug  
 detector means** includes mechanical switches activated by contact pins of a  
 plug inserted into the socket.

JA8 (emphasis added).

As with the previous claim term, AES argues that the structure of this term is indefinite. Dkt. #47 at 3. Lufthansa argues that the associated structure is “switches,” which are explicitly mentioned in claim 2 and described in the specification. *See* JA4, 2:31-34, JA6 4:42-45, JA7:44-49. AES again argues that the patent fails to disclose the circuitry needed to perform the function. Dkt. #63 at 21-22.

Consistent with the Court’s ruling on the first disputed term and the testimony of Lufthansa’s expert, the Court finds that disclosure of such circuitry is not required for a person skilled in the art to understand this term. For these reasons previously stated, the Court finds that the structure is not indefinite, that the term “plug detector means” has the function of “detecting the presence of contact pins of a plug inserted in the socket” and its associated structure is “switches.”

### 3. “Control means”

The next term in dispute is “control means.” The parties agree this is a means-plus-function claim term. Dkt. #47 at 1. Claims 1 and 4 of the ‘016 patent provides as follows:

1. ...and **control means** responsive to plug presence detection by said plug detector means...

4. ...and said **control means** is constructed and arranged for cutting-off voltage of said central voltage source means.

JA8 (emphasis added).

Lufthansa argues that the function is “[r]endering the voltage supplying means operative to supply voltage to the socket.” Dkt. #47 at 3. AES argues that the function is “[r]endering the voltage supplying means operative... only if the time between detection of a first contact pin of a plug and the subsequent detection of a second contact pin of the plug does not exceed a predetermined time interval.” *Id.* The parties agree on a second function, cutting

1 off voltage. Dkt. #47 at 6. Lufthansa argues that the corresponding structure is “logic elements  
2 to receive and transmit internal and external signals and configured to activate switches based  
3 upon those signals.” *Id.* at 4. As with the previous term, AES argues that the structure is  
4 indefinite. *Id.*

5 Lufthansa argues that AES’ function is reading in a superfluous “when” limitation.  
6 Dkt. #62 at 29. AES argues that this “when” limitation is explicitly part of the claim, and that  
7 “courts routinely find that when a claimed function occurs is a crucial part of the limitation.”  
8 Dkt. #63 at 15 (citing cases from several district courts). Lufthansa argues that “the control  
9 means function is not limited to the specific conditions that AES seeks to impose, nor has AES  
10 ever argued that the structure would be different if their proposed function were adopted as  
11 opposed to [Lufthansa’s].” Dkt. #81 at 11 n.3. Lufthansa argues that the structure is disclosed  
12 in the specification:  
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15           Between the first activation of the one contact switch 45 and that  
16           of the other contact switch 46, a contact time is obtained by the  
17           control and supervision unit 60. If this contact time is below a  
18           maximum value, a corresponding enabling information is stored in  
19           the control and supervision unit 60.... the control and supervision  
20           unit 60 applies the supply voltage to the supply line 20 by means  
21           of an internal voltage switch so that the contact pins 53, 54 are  
22           provided with mains voltage via the contact elements 42, 43.

23 Dkt. #62 at 30 (citing JA8). AES again argues that there is no structure identified in the patent,  
24 instead there is just a “generic, blank box.” Dkt. #63 at 16.

25 Consistent with the Court’s ruling on the first disputed term, the Court finds that  
26 disclosure of circuitry is not required for a person skilled in the art to understand this term. The  
27 Court further finds that AES is impermissibly attempting to read an extra, unsupported  
28 limitation into the function of these terms. *See Omega Eng’g, Inc. v. Raytek Corp.*, 334 F.3d  
1314, 1322 (Fed. Cir. 2003). For these reasons, the Court finds that the structure is not

1 indefinite, that the term “control means” has the function of “rendering the voltage supplying  
2 means operative to supply voltage to the socket” and its associated structure is “logic elements  
3 to receive and transmit internal and external signals and configured to activate switches based  
4 upon those signals.”

5 4. “*Fault current detector means*” and “*short circuit detector means*”  
6

7 The next terms in dispute are “fault current detector means” and “short circuit detector  
8 means.” The parties agree these are means-plus-function claim terms. Dkt. #47 at 1. Claims  
9 12, 14 and 15 of the ‘016 patent provides as follows:

10 12. The voltage supply apparatus as defined in claim 1 including **fault**  
11 **current detector means** for detecting fault current to which said control  
12 means is responsive.

13 14. The voltage supply apparatus as defined in claim 1 including **short**  
14 **circuit detector means** for detecting a short circuit to which said control  
means is responsive.

15 15. The voltage supply apparatus as defined in claim 14 including voltage  
16 switch means for turning off the voltage supply if the **short circuit detector**  
17 **means** detects a short circuit.

18 JA9 (emphasis added).

19 The parties disagree about the function of these terms. Lufthansa argues that the  
20 function of the fault current detector means is “detecting fault current,” and the function of the  
21 “short circuit detector means” is “detecting a short circuit or overload.” Dkt. #47 at 6-7. AES  
22 argues that the function of the fault current detector means is “detecting fault current to which  
23 said control means is responsive,” and the function of the short circuit detector means is  
24 “detecting a short circuit to which the control means is responsive.” *Id.* Lufthansa argues that  
25 the structures for these terms are, respectively, “circuit configured to determine the difference  
26 of the current flowing in the outlet supply lines and transmit a signal,” and “circuit configured  
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1 to determine if the current flowing in the outlet supply lines is excessive and transmit a signal.”

2 *Id.* As with the previous claim term, AES argues that the structure for these terms are  
3 indefinite. *Id.*

4 Lufthansa argues that AES again tries to read an extra limitation into the function that  
5 requires “not only detection of a fault current or short circuit, but also requires that the control  
6 means is responsive to the detection.” Dkt. #62 at 32. AES argues that omitting this limitation  
7 is improper “because, as the Patent claims, the signals generated by these detectors are sent to  
8 the control means for processing, so leaving out that portion of the claim referencing the  
9 control means makes no sense.” Dkt. #63 at 23. Lufthansa argues that the specification  
10 provides the structure for both of these claim terms:  
11  
12

13 During operation of the socket 22, i.e., when the control and  
14 supervision unit 60 has applied the supply voltage to the socket 22  
15 via the supply lines 20, the short circuit detector 62 and the line  
16 supervision detector 64 have to perform extensive supervision  
17 tasks. On the one hand, a current limitation of the voltage supply to  
18 about 100 V is performed in the short circuit detector 62. Thereby  
19 an overload of the supply device 16 is prevented. Furthermore,  
20 when a strong overload is present, an overload signal is outputted  
21 by the short circuit detector to the control and supervision unit 60  
22 via the signal line 63. The second function of the short circuit  
23 detector 62 is fault current detection. If the difference of the  
24 current flowing in the two current supply lines 20' exceeds a  
25 predetermined value, a corresponding signal is outputted via the  
26 signal line 63 to the control and supervision unit 60, which then  
27 turns off the current supply. Both control functions of the short  
28 circuit detector 62 thus serve to determine electric interferences  
caused by the electric device 36 or potential manipulations.”

Dkt. #62 at 32 (citing JA7). AES again argues that there is no structure identified in the patent,  
instead there are blank boxes. Dkt. #63 at 23.

Consistent with the Court’s ruling on the first disputed term, the Court finds that  
disclosure of circuitry is not required for a person skilled in the art to understand this term. The  
Court further finds that AES is improperly attempting to read an extra, unsupported limitation



1 into the function of these terms. *See Omega Eng'g, supra*. For these reasons, the Court finds  
 2 that the structures for these terms are not indefinite, that the term “fault current detector means”  
 3 has the function of “detecting fault current,” “short circuit detector means” has the function of  
 4 “detecting a short circuit or overload,” and the structures for these terms are, respectively,  
 5 “circuit configured to determine the difference of the current flowing in the outlet supply lines  
 6 and transmit a signal,” and “circuit configured to determine if the current flowing in the outlet  
 7 supply lines is excessive and transmit a signal.”

9 5. “*Subsequent Detection*”

10 Claim 1 of the ‘016 patent provides as follows:

11 1. ...**only if the time between the detection of a first contact pin and the**  
 12 **subsequent detection of a second contact pin of the plug does not exceed**  
 13 **a predetermined maximum time value.**

14 JA8 (emphasis added).

15 Lufthansa’s construction of this claim language is “the detection of the presence of first  
 16 and second inserted contact pins such that the time interval of the detection ranges from zero to  
 17 a predetermined maximum time value inclusive of these two end points.” Dkt. #47 at 5.  
 18 Lufthansa’s proposed construction would cover any device that detects prongs inserted within  
 19 “zero” seconds of each other (simultaneously) or “within a predetermined maximum time value  
 20 inclusive of these two end points” (subsequently). *Id.*

22 AES argues that this claim language is indefinite. First, AES argues that the  
 23 construction cannot include simultaneous detection because such an interpretation “conflicts  
 24 with the plain meaning of two express phrases in the claim—‘only if’ and ‘subsequent  
 25 detection.’” Dkt. #63 at 24-25. AES argues that Lufthansa is attempting to read these two  
 26 phrases right out of the claim, and that this approach has been rejected by the Federal Circuit.  
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1 *Id.* at 25 (citing *Vederi, LLC v. Google, Inc.*, 744 F.3d 1376, 1382–85 (Fed. Cir. 2014)  
2 (reversing district court because “construction requiring elevation, and ‘elevation’ alone in the  
3 strict sense, gives no effect to the ‘substantially’ modifier contained in the claims.”); *Aspex*  
4 *Eyewear, Inc. v. Marchon Eyewear, Inc.*, 672 F.3d 1335, 1348 (Fed. Cir. 2012) (reversing  
5 district court’s claim construction that the term “rearwardly directed free end” meant a  
6 “rearwardly directed end portion” because such a construction “effectively read [] the term  
7 ‘free’ out of the limitation”)). AES argues that the claim’s construction must incorporate the  
8 “later in time” meaning of “subsequent.” Dkt. #63 at 24.

10 AES also points to the prosecution history. The record clearly shows that Lufthansa  
11 amended Claim 1, removing the term “simultaneous” and adding the term “subsequent.” *See*  
12 JA105-110. The record also clearly shows that this language was changed, at least in part, to  
13 get around a prior patent, “the Crane Patent.” *See* JA108-09 (“the amendment... is ‘necessary’  
14 to define the invention over the patent to Crane et al...”).

16 Because the claim cannot be construed to cover simultaneous detection, AES argues  
17 that the claim is left with an ambiguous range of time, that the patent does not adequately  
18 define simultaneous or subsequent detection, and that one of ordinary skill in the art “can only  
19 guess what is covered and what is not, making the claim indefinite.” Dkt. #63 at 28-29.

21 In Response, Lufthansa argues that the patent history does not show a “clear and  
22 unmistakable disavowal” as required to find a disclaimer occurred. Dkt. #62 at 16. Lufthansa  
23 argues that it merely “amended its claims to clarify the claim scope when the examiner found  
24 one limitation to be a subset of another limitation...and then expressly stated that it was not  
25 surrendering any coverage...” Dkt. #81 at 14. Lufthansa points to language in the prosecution  
26 history where the examiner instructed the applicant to remove simultaneous detection to  
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1 overcome indefiniteness because simultaneous detection was a subset when a maximum  
2 contact time is not exceeded between the first and second plug detection. *Id.* (citing JA101-02).  
3 Lufthansa also argues that AES’ interpretation of the word “subsequent” to mean “later in  
4 time” is incorrect. *Id.* at 15. Lufthansa deems this interpretation to be “litigation-induced.” *Id.*  
5 Lufthansa offers its own definition: “the detection of another or second contact pin.” Finally,  
6 Lufthansa argues that “there is nothing unclear about this term” because Lufthansa has shown  
7 that the predetermined time value includes zero. *Id.* at 16.

9       The Court agrees with AES—both the explicit language of the claim and the  
10 prosecution history make clear that this claim does not include simultaneous detection. There  
11 is ample evidence from the prosecution history to conclude that Lufthansa made a “clear and  
12 unmistakable disavowal” of simultaneous detection in part to avoid the Crane patent. *See*  
13 *Purdue Pharma, supra*. Even if the Court ignored that evidence, focused instead on the  
14 “subset” discussion in the prosecution history, and believed that Lufthansa removed  
15 “simultaneous” solely to remove the overlapping subsets, Lufthansa fails to explain why it not  
16 only removed the word “simultaneous” in the amendment, but added the word “subsequent.”  
17 The Court agrees with AES’ interpretation of that word. Lufthansa’s interpretation of  
18 “subsequent” to have no temporal meaning in this claim ignores that the word “time” is found  
19 in the same sentence. JA8. Because the claim cannot be construed to cover simultaneous  
20 detection, AES is correct that the claim is left trying to cover an ambiguous range of time, and  
21 that one of ordinary skill in the art can only guess what is covered and what is not. Based on  
22 the language of the claim, the remainder of the patent, and the prosecution history, the Court  
23 finds by clear and convincing evidence that the claim language “subsequent detection” is  
24 indefinite.  
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**V. CONCLUSION**

This Court has construed the disputed claim terms in this case as set forth above, and the Clerk is directed to send a copy of this Order to all counsel of record.

DATED this 25 day of April 2016.



RICARDO S. MARTINEZ  
CHIEF UNITED STATES DISTRICT JUDGE